

CLAIMS

1 1. A method for operating a memory controller, the method
2 comprising:

3 receiving a current memory access request from an
4 agent;

5 determining a page management policy associated with
6 the agent in response to the receiving;

7 setting the memory controller to the page management
8 policy associated with the agent;

9 executing the current memory access request on the
10 memory controller; and

11 transmitting results of the executing to the agent.

1 2. The method of claim 1 wherein the page management
2 policy is a page-open policy.

1 3. The method of claim 1 wherein the page management
2 policy is a page-close policy.

1 4. The method of claim 1 wherein the current memory access
2 request includes an agent type and the determining is
3 responsive to the agent type.

1 5. The method of claim 4 wherein the agent type is a
2 central processing unit or an input output adapter.

1 6. The method of claim 1 wherein the current memory access
2 request includes an agent workload type and the determining
3 is responsive to the agent workload type

1 7. The method of claim 1 wherein the current memory access
2 request includes a unique identifier for the agent and the
3 determining is responsive to the unique identifier.

1 8. The method of claim 1 wherein the determining a page
2 management policy includes:

3 calculating a probability that a future memory access
4 request by the agent will include access to a page accessed
5 by the current memory access request; and

6 using the probability to determine the page management
7 policy.

1 9. The method of claim 8 wherein the calculating is based
2 on a history of memory access patterns associated with the
3 agent.

1 10. The method of claim 8 wherein the probability is
2 calculated based on a number of prior sequential memory
3 access requests by the agent to a common page divided by a
4 total number of prior memory access requests by the agent
5 in a specified time interval.

1 11. The method of claim 8 wherein the probability is
2 calculated based on a number of prior sequential memory
3 access requests by the agent to a common page.

1 12. The method of claim 8 wherein the determining results
2 in a page management policy of page-open if the probability
3 is greater than or equal to a threshold value and a page
4 management policy of page-close if the probability is less
5 than the threshold value.

1 13. The method of claim 1 wherein the determining results
2 in the page management policy being dynamically adapted
3 based one or more prior memory accesses by the agent.

1 14. The method of claim 1 wherein the setting the memory
2 controller is performed dynamically in response to the
3 determining.

1 15. A system for accessing system memory, the system
2 comprising:

3 a memory bank configured to support page accesses; and

4 a memory controller in communication with the memory
5 bank and an agent, wherein the memory controller includes
6 instructions to implement a method including:

7 receiving a current memory access request from the
8 agent, wherein the current memory access request includes a
9 request to access data stored on the memory bank;

10 determining a page management policy associated with
11 the agent in response to the receiving;

12 setting the memory controller to the page management
13 policy associated with the agent;

14 executing the current memory access request on the
15 memory controller, wherein the executing includes accessing
16 a page on the memory bank; and

17 transmitting results of the executing to the agent.

1 16. The system of claim 15 wherein the memory bank
2 includes one or more memory devices.

1 17. The system of claim 15 wherein the memory devices
2 include one or more of dynamic random access memory,
3 extended data out dynamic random access memory and
4 synchronous dynamic random access memory.

1 18. The system of claim 15 wherein the memory bank
2 includes main memory.

1 19. A computer program product for operating a memory
2 controller, the computer program product comprising:

3 a storage medium readable by a processing circuit and
4 storing instructions for execution by the processing
5 circuit for performing a method comprising:

6 receiving a current memory access request from an
7 agent;

8 determining a page management policy associated with
9 the agent in response to the receiving;

10 setting the memory controller to the page management
11 policy associated with the agent;

12 executing the current memory access request on the
13 memory controller; and

14 transmitting results of the executing to the agent.

1 20. The computer program product of claim 18 wherein the
2 determining a page management policy includes:

3 calculating a probability that a future memory access
4 request by the agent will include access to a page accessed
5 by the current memory access request, wherein the
6 calculating is based on a history of memory access patterns
7 associated with the agent; and

8 using the probability to determine the page management
9 policy.